

Case study: using service design methods to remove hindrances for digital self-service

- Challenges inherent in fitting the service design method
with pre-existing company conventions and structure

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MASTER'S THESIS	
Arcada	
Degree Programme:	Media Management
Identification number:	
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Title:	Case study: using service design methods to remove hindrances for digital self-service - Challenges inherent in fitting the service design method with pre-existing company conventions and structure
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<p>Abstract:</p> <p>The Fast development project was done as a 4 months work assignment for Fujitsu. The Fast service channel is a web service, through which Fujitsu customers can get help when facing any IT problems. The main aim of the project was to find out the flaws, and improve Fast to be user-friendly, thus making it an attractive channel for Fujitsu customers to contact the service desk. The research was done using service design methods. The main research method was interviewing Fujitsu employees and customers to get a clear picture of the possible problems. Also a background research was made to shed light on where the service desk industry is going. Only customers using Fast were interviewed in this project, for further development, including customers using other tools than Fast (even when they have access to Fast) should also be included. After the research phase, re-designing of Fast was done based on the interview findings. The main findings had to do with the service desk part of Fast, which is also the biggest expense. It seemed that end-users were reluctant to start using Fast because it was not properly introduced to them at the launch phase. This lead to end-users sticking to the familiar tools (e-mail and phone) instead of using Fast, despite its clear benefits. Fujitsu employees also had a quite different view on the current role of Fast than the end-users, who viewed Fast as simply a service request channel, but both felt that Fast could become an encompassing problem solving service in the future. Despite the project being about developing Fast, a suggestion to improve the launch process was made. A new layout for Fast was introduced which was simple, intuitive and only presented one task at a time. It was suggested that this new layout, together with the new launch process, should grow the usage percentage of Fast in the future. Development suggestions on improving the service design method to fit existing company methods and structures where presented.</p>	
Keywords:	Fast service channel, service desk, self-service, service design, customer oriented, Fujitsu.
Number of pages:	41
Language:	English
Date of acceptance:	26 May 2014

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1 INTRODUCTION

1.1 Motivation for choice of research topic

This thesis deals with developing the digital service channel called *Fujitsu Fast Service Channel* (or just Fast), which is the main channel for Fujitsu clients for making service requests and receive information about service interruptions. There are about 60 000 Fast users today with an expected rise to 150 000 in a few years. Being the main communication channel between client company end users and Fujitsu, it is an important product for Fujitsu, thus making it an interesting research and development topic.

Fujitsu offers a wide range of information technology services to it's client companies (from servers to ecosystems) but there are only a few touch-points where the end users are aware that they is using a product by Fujitsu. A big part of the offering consists of IT infrastructure or solutions where the user-interface and parts of the solution is made by a third party, making it unclear for the end user what company is providing what part. The Fast Service Channel is an exception. The Fast user-interface is designed by Fujitsu (although built on Liferay technology), making it clear for the end user that the whole service is provided by Fujitsu. To the users it does not matter that there are many third party products running in the background like Service manager (HP), Miradore (Miradore Ltd), Active Directory (Microsoft) etc. They know that Fast is the interface for communicating with Fujitsu, making Fast an important brand image builder. Every negative aspect of Fast is associated with Fujitsu. This makes Fast together with Patja Easy (see page 7), that also has a user-interface designed by Fujitsu, one of the most important (if not the most important) channels through which Fujitsu can directly influence the end users opinion about the company.

1.2 Background information

I (the author) had been working for Fujitsu in marketing and communications as an Art Director when I heard about plans to renew the Fast service portal in the fall of 2013. I applied to be moved to the infrastructure-team to plan the new concept and user-interface for the new Fast (version 4.0). The user-interface had been updated a year earlier, but after brief discussions with persons in charge of the service, it felt that the ser-

vice now needed a heavier restructuring instead of another facelift. The original plan was to outsource the work, but I argued that keeping the work in-house would be much more efficient and lead to a better end result when I as a service designer could work tightly together with the production team. It was decided that the new concept and user-interface, together with a working demo, should be developed in four months. After that the production team could work on implementing all the features before the final release, which was planned to happen in the summer of 2014. This master's thesis was written as a part of the Fast development project.

1.3 Fujitsu globally

Fujitsu is a leading Japanese information technology company employing over 170,000 people in 100 countries. It is the 166th biggest company in the world (CNN, 2012) and the 3rd largest information technology company (Gartner, 2012) with a 41,1 billion-euro revenue and 2,5 billion-euro research and development budget. The company was established in 1935 and currently offers broad selection of technology products and services ranging from space- to biotechnology. (Fujitsu, 2013)

1.3.1 Fujitsu in Finland

Fujitsu in Finland has its roots in the company Suomen Kaapelitehdas established in the 1960s, which later became Nokia Elektroniikka. Fujitsu bought the company in 1991 and after many name changes it is today called Fujitsu Finland Oy (I will refer to Fujitsu Finland Oy as simply Fujitsu from now on). Fujitsu employs 2 700 people and makes an 18 million-euro operating profit. In Finland over half of the income comes from services while the main business in many other countries are devices. Fujitsu is strong in both the private and public sector, being involved in e.g. the KanTa project (The National Archive of Health Information) aiming to digitalize Finnish healthcare services (Fujitsu, 2012). (Fujitsu, 2013)

1.4 Patja

The Patja service model is the strategic backbone in Fujitsu's service business. The operating principle behind Patja is that the customer company should be able to focus on its core business and leave the whole IT infrastructure to Fujitsu. Fujitsu Finland's former managing director Yrjänä Ahto used to say that the Patja service model is "the whole lot as a service" (fin. palveluna koko paska). Patja includes the whole IT infrastructure from hardware to software, including maintenance and the whole ecosystem. This aims at making IT easy for everyone. Today Patja includes 120 customer companies, 130,000 workstations and 7,000 servers. (Fujitsu, 2013)

1.4.1 Patja Easy

Launched in 2012 Patja Easy is a relatively new part of Patja. Patja Easy was designed to tackle the problem that Patja users had many devices (BYOD) and need to access information both from the office and on the move (see terminology). The Patja Easy marketing page describes the service as following: "With Fujitsu Patja Easy, the web based dashboard service, you are able to use all your desktop work tools anywhere" (Fujitsu, 2012). In other words, it is a virtual desktop where you can use all your programs and store all your information. You can access the desktop through any device (whether it is a windows, android or mac, laptop, tablet or phone) that is connected to the internet. You are not bound to time, place or device when you work with Patja Easy. Patja Easy includes all the features that you would expect to find on a regular computer, like programs (including Office), e-mail, calendar, VoIP and some special features like RSS feeds and the Fast service channel. Patja Easy is the virtualized desktop that is a part of the Patja service model

1.4.2 Fast service channel

The Fast service channel is the main interface between Patja (not only Patja Easy) users and Fujitsu. The Fast user-interface contains three main sections: news, service desk and professional tools. The *news* (figure 1. left column under the Fast logo) is a one-way communication channel, through which Fujitsu informs the users about changes and service disruptions. In IT problem situations, *service requests* can be made using the 5

top icons on the right (figure 1). There are five *service request* functionalities: 1. *Service requests* send a written service request to the service desk through Fast. 2. *Call me* places a call request to the service desk (the user can select at what time they want to be called). 3. The user can look for problem resolutions in the Q&A database called *Knowledge Base*. 4. *Call service desk* simply gives the user the number of the service desk. 5. *Visit service desk* gives the opening hours of a Fujitsu service point in the company office building (if this service is included in the contract). The other tools in the right column are for the company's IT professionals who use them for reporting, orders and service changes. These are not shown to the normal users. What tools are shown to a user depend on what role the user has in the company and what service level agreement the company has with Fujitsu. A normal user with no IT responsibilities usually just sees the news feed on the left and the service desk tools in the top row.

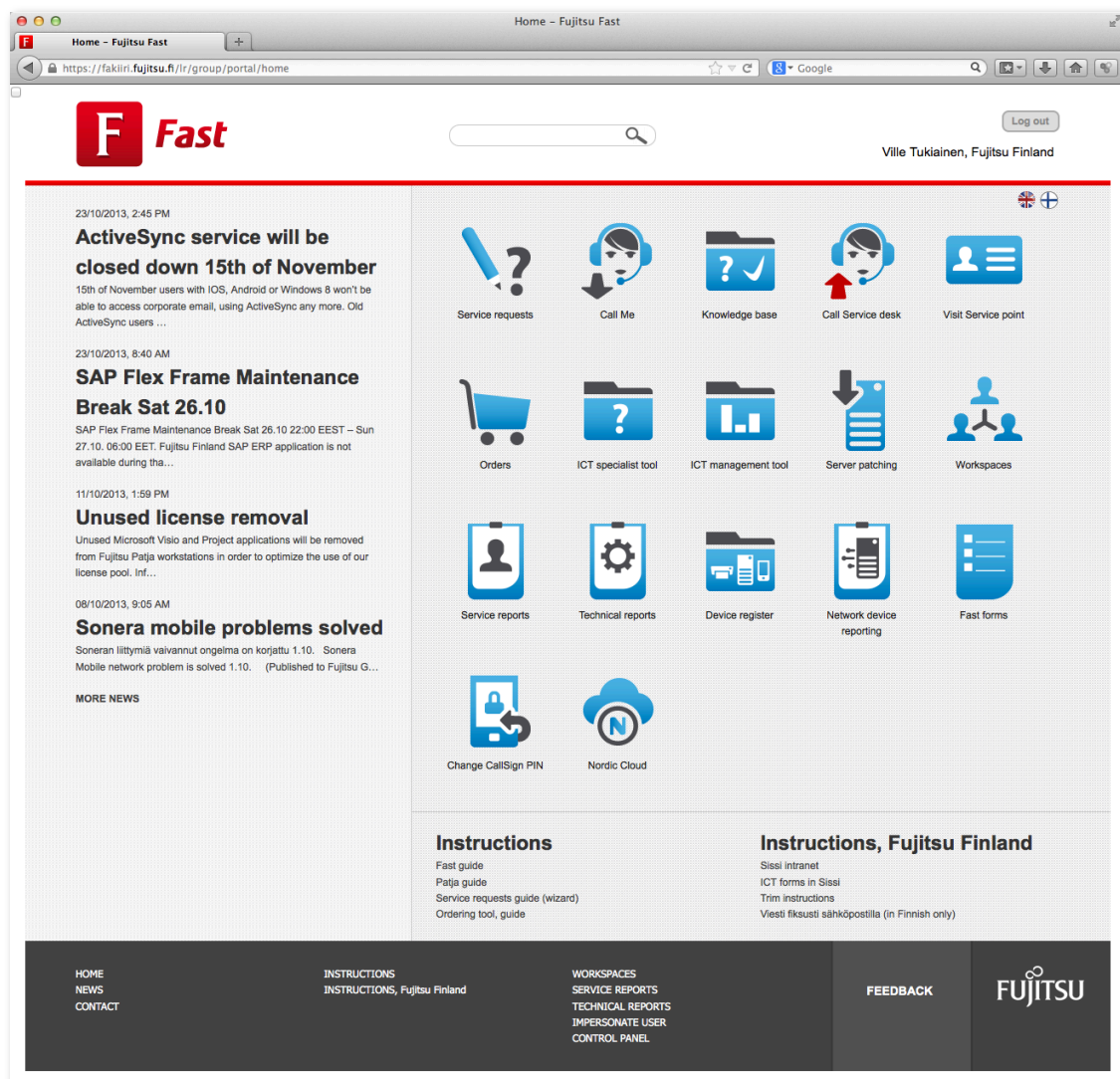


Figure 1. Design of the Fast service channel (screen capture 24 October 2013)

1.5 Aim of the project

Because Fujitsu has not until recently focused on the usability and visuality, the development of Fast has been very technology driven. There has not been any party involved in the development process responsible for the usability of Fast. The development has emphasized implementing new technology without a proper understanding of how the new features fit the big picture, or of how the features should be presented to the end user. The main aim of the development has historically been to reduce costs, not to improve the usability.

This development project was done in a user-centric way. Reducing costs was still a driving factor for Fujitsu. The project focused on the user and looked at how existing and new technology could be implemented to make Fast intuitive and user-friendly. The main aim was to get users to start using Fast when dealing with IT problems, instead of e-mailing or calling the service desk. The hypothesis was that users could be persuaded to use Fast, if it was easy to use and brought clear benefits over calling or e-mailing the service desk. This shift from calls and e-mails to Fast, would already reduce costs for Fujitsu, since a service request made through Fast is cheaper and can be processed more efficiently than a service request made by phone (or e-mail). When this aim was reached, new (technology based) features could be introduced, that automatically aided the users, thus reducing the overall amount of service requests. This would not only reduce costs for Fujitsu but for the customers too, as it aided the users and speeded up the problem resolution.

1.6 Research questions and hypotheses

Question: Is it possible and what steps need to be taken to get customers to use a self service channel instead of using old familiar tools (calling and e-mailing) to make service request when facing IT problems.

Hypotheses: If a new and improved user centric channel is introduced, that is: simple, intuitive and brings benefits over the old media, users will adopt new behavior that benefits both the users and the service provider.

1.7 Limitations

The time scope for the concept- and user-interface development was four months. This limited the amount of user-interface versions and did not allow for testing them on end-users. The process was more ongoing than one-step at the time. The timespan also limited the amount of customer interviews and commenting rounds. The time limitation was also why an extensive background literature research could not be made, so the work had to be done mainly based on the interviews. It was considered time best spent, to concentrate on interviews and benchmarking, which could be made quite extensively in a shorter period of time.

Although the Fast service channel includes a lot of elements and technologies from different companies the main target was to develop the functionalities and user-interface (built on the Liferay technology). The production team worked on the information flow between the Fast interface and other programs (back-end) like *Service Manager* used by the service desk while I (and this research) focused on the front end.

The research excluded most of the business processes inside Fujitsu, like selling and interaction of teams working on different parts of Fast.

1.8 Theoretical framework

The development of Fast was based on service design methods. The service design method aims at focusing on the customers and their journey from the start to the finish of performing a task. It also aims at understanding their motives as well as the service provider processes behind a service. There is no single correct answer to what service design is, Marc Stickdorn and Jacob Sheider puts it very well in the book *This is service design thinking*: “If you would ask ten people what service design is, you would end up with eleven different answers – at least” (Marc Stickdorn, 2011p. 29). One of these answers by Birgit Mager comes very close to what the Fast development process was striving to do: “Service Design aims to ensure that service interfaces are useful, usable and desirable from the client’s point of view, effective and distinctive from the supplier’s point of view (Mager, 2008 p. 354)

The views and textbooks on service design differ from each other quite a lot but there are some fundamental elements that they all have in common. Most importantly,

service design is *user-centric*: the fundament of service design is user-centricity and looking at the service through the users eyes. It is also *co-creative*: all service design builds on involving both the user and service provider part in the design process. Thirdly, service design is *holistic*: it looks at the whole service experience and all of its actors, from the first user decision to the last trace of the service.

There is a huge selection of service design tools available that helps understand the timeline, surroundings and actors involved in the service. As service design can be adapted to a broad variety of projects the service design process always needs to be modified to fit the particular case.

1.9 Definitions

The words *user* and *end-user* refer to a Fujitsu client company employee who has an access to Fast (even though he/she might not use it). This word is chosen to highlight the fact that all the individual employees have different job assignments (and motivations) with different demands on Fast.

2 METHODOLOGY

The research and development of the Fast service channel was done using service design methods. These user centric methods encompass a lot of different tools, which aim at getting a deep understanding of all parties and elements involved in a service, which is often viewed upon as a process of events or a journey (Marc Stickdorn, 2011 p. 158-161). The Fast development project contained for steps: 1 Pre development phase, 2 Research phase, 3 Development phase, 4 Design phase. Different tools and methods were used for the different phases, these phases are described in this section.

It is important to remember that because the aim of the project was an overall development of Fast and not only a part of it, a quite broad variety of research methods were used. Benchmarking, literature and published surveys were used as supporting material for getting a broad view on the subject. Interviews were used as the main research method to find out how Fast was positioned in this industry. Service design does also not rule out other methods from the development process so the supplementary methods used were not conflicting with the main method.

The customer interview respondents selected were only Fast users which does create a big lack in the research. No clients were interviewed who had the possibility to use Fast, but either chose not to, or simply had no need to. This lack originated through the time restraint and it did not become clear early enough that the usage percent of Fast was one of the main issues. Finding and interviewing these clients would also have required a different approach from interviewing persons familiar with Fast. When this problem was noticed, new questions dealing with the usage problem were included in the already scheduled interviews.

2.1 Pre development phase – background research

The service design method was chosen because it aims at understanding the different motivations and actions of all parties involved. This was suitable for the Fast development since no one had an encompassing view of the parties involved (Fujitsu / customer) and their needs and motivations. Once the service design method had been chosen, an investigation of different service design methods and tools was done to specify what

where the most suitable for designing a digital service channel like Fast. For this purpose reading through case studies and different service design methods proved fruitful.

A background research on the service desk industry's future was also made. This research consisted mainly on reading through published surveys on the subject. For this the service desk institute (www.servicedeskstitute.com) proved fruitful as it does a lot of yearly surveys that are publicly accessible.

2.2 Research phase - interviews

Service design heavily relies on different qualitative research methods (Miettinen, 2011 p. 21-24) (Marc Stickdorn, 2011 p. 120-121), which is why the main research method used in this project was unstructured interviews of both Fujitsu employees and customers. The purpose was to get a deep understanding about the needs and motivations the individual users in client companies, and Fujitsu employees had relating to Fast. This also included getting an understanding of the related processes inside Fujitsu. Already in the beginning Fujitsu also stressed that the basis for the development was cost savings (through better usability). This is why it was important to find out all the processes Fast was a part of.

Both the needs of Fujitsu and the end users (not forgetting the companies the end users worked for) needed to be mapped out so the new Fast could serve all parties involved as well as possible. Inside Fujitsu a wide range of experts and developers with different connections to Fast were selected for interviewing and around 10 interviews were done. The service desk part of Fast is the biggest one (involving the biggest cost), which is why persons doing the day-to-day problem solving were also interviewed. On the customer side, both private- and the public sector company (or organization) employees, with different IT skills and work assignments, were interviewed. The work title of the respondents varied from IT manager to laborant. Over 10 clients were interviewed in single and group conversations.

Combining both the provider and client side of Fast, gave a good overall view and understanding of all sides needs. This information gave a good basis for the development phase.

2.3 Development phase – co-creation and benchmarking

Once both the end-user and Fujitsu employee (working with Fast) needs were determined, benchmarking was used to find out what technology and solutions competitors were using. This gave a good understanding of the current service desk industry (often including self-service portals). During the development, additional interviews and co-creating sessions with Fujitsu experts were set up to come up with, and validate, the new ideas both businesswise and technology wise. This ensured that the planned features of Fast fitted in to the Fujitsu offering portfolio, did not compete with another product and were technically producible.

2.4 Design phase – design and validating

The last phase partially overlapping the development phase because it was easier to co-create and get feedback on tangible visual plans instead of just ideas. The development phase relied heavily on research and results of the interviews, but this phase also involved my personal expertise. I did already quite early extensive user-interface models to elaborate the new features and especially to find out what type of visuals Fujitsu employees working with Fast liked. This gave the opportunity for more people to contribute to the user-interface design phase than just designing it with the one that was responsible for this part. I also wanted to keep the look-and-feel close to the Fujitsu brand guidelines even though a lot of services provided by Fujitsu do not follow it.

3 ANALYSIS

Based on the interviews a list of issues was put together. This list had issues of different scale and importance, like minor issues concerning visual details and major issues concerning the low usage percentage of Fast. All these issues were then categorized under suitable headings that could be dealt with. In this analysis the aim is not to focus on every separate issue but to focus on the few main headings that proved to be the main areas of concern.

3.1 Complexity of Fast

On bases of the background materials and especially the interviews, it became clear that the Fast service channel is a very complex system of programs and actors. It was important to map out the structure of Fast and all related operations for a clear understanding of the relations between the actors and actions. *Figure 2* shows an overview of the actors and actions related to Fast. The reader does not have to understand the individual elements in the map, but get a general view of the complexity.

To simplify, there are two main parts involved that intertwine: programs and people. Fast communicates with other programs using the workflow engine (see terminology) while people are mainly involved in supporting functions (sales, development) and service desk functions. The map could be much more detailed but since the aim of this project was not to develop the company structure but Fast itself, a general understanding of the related actors was enough.

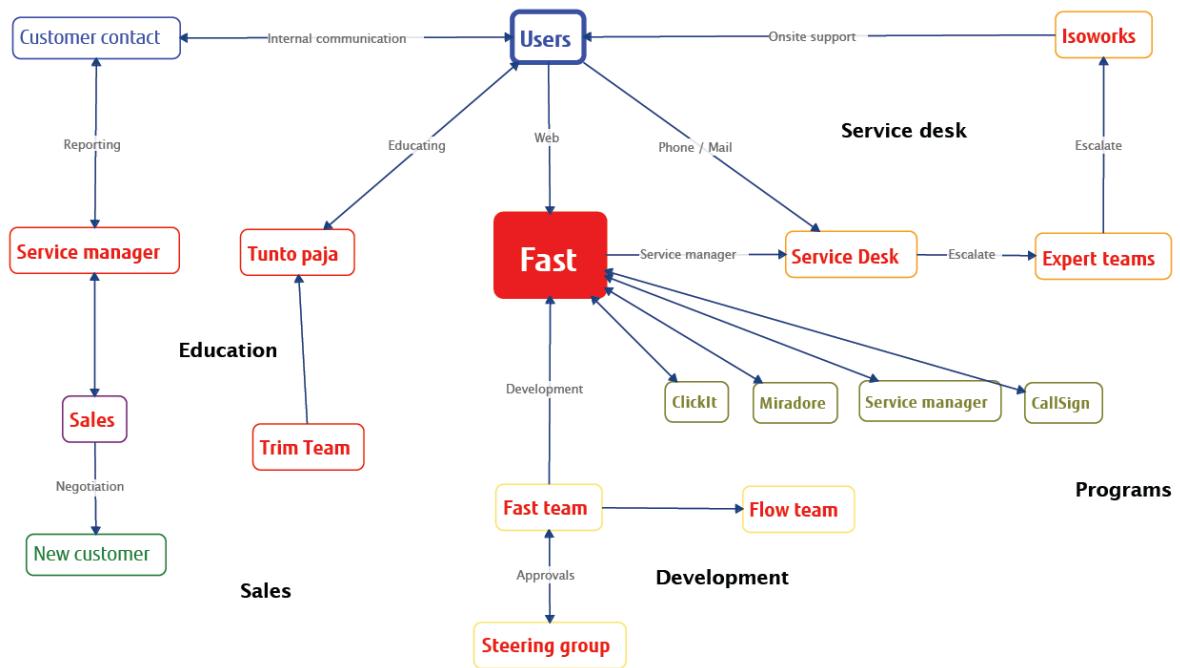


Figure 2. Map of actors and systems connected to Fast

3.2 Users view Fast as simply a service desk channel

Already at the beginning of the project it was identified that the biggest expense related to Fast was the service desk. It also became clear in both the Fujitsu and client interviews that the service desk functions were perceived as the main part of Fast (for some, even the only). This was in conflict with what Fast was supposed to be according to Fujitsu employees in charge of Fast, who saw Fast as an encompassing service channel concerning all IT related issues. For many users creating a service request was the only function they could name in Fast. When asked what Fast is, the most common answer was: “it is a way of creating a service request”. To clarify, Fast is not the only way a user can contact the service desk. There are usually three ways (depending on the service level agreement) of making a service request: Fast, calling and e-mailing. The interview answers had some variation in them but a clear trend was that clients saw Fast only as a service desk function, while Fujitsu employees thought it was much more.

Most importantly, even though the service desk is a big expense for Fujitsu, and users currently saw Fast and the service desk as more or less the same thing, Fast was perceived as a channel which in the future could both lower the service desk expenses

and be a useful tool in addition to the service desk. This view could be derived from all the respondents (both Fujitsu and customer). In other words, while users did not perceive Fast as the tool Fujitsu employees working with Fast wanted it to be, the users still maintained a positive view on Fast, and wished for it to become an encompassing tool in the future. It has to be pointed out that service desk expenses can not be directly compared to e.g. Fast development expenses, since Fast is just one of the channels for making a service request. The service desk expenses would exist even without Fast, but there seemed to be big potential in Fast to reduce these costs.

Both the interviews and the benchmarking supported the theory that the easiest way of reducing service desk costs was by getting users to switch from e-mailing and calling the service desk, to start using Fast. This switch in user behavior would already reduce costs according to service desk managers. Adding tools to Fast that could solve user-problems without them even creating a service request, could bring further savings. Browsing through the support pages of several big IT providers like Microsoft, Apple and IBM gave a good understanding of how the competitors were dealing with this issue. All company's first tried to solve the user-issues automatically by presenting common resolutions to issues the user had defined. After this, they also gave further suggestions on how to resolve an issue without contacting them, like asking the community and presenting frequently asked questions. After all these steps the last option was usually to send the issue to the company service desk. Calling the company was usually not an option, and if it was, the phone number was not located on the main page. Fast cannot be directly compared to Microsoft, Apple or IBM since their main product is usually a device or program, and the user-support is just a supporting function to that product. The Fujitsu service desk on the other hand is a product in itself, for companies wanting to outsource their IT support (Fast is a part of this support-package).

Many of the service desk surveys predicted that the service desk function is moving in a self-service and automation direction to lower expenses and enhance performance. The white paper on the future of service desks called *The Service Desk 2017 & Beyond* (Service Desk Institute, 2013) painted a picture of a very automated future. The survey on self-service (Service Desk Institute, 2011) showed that while self service is for many companies still in the development phase, the interest towards it is growing and it is expected to be widely acknowledged by not only younger, but also the older generation in the near future.

3.3 Users will stick to familiar technology

Interviews with service desk personnel shed a light on the usage percentage of Fast compared to the other mediums of creating a service request. Only under 10% of the service requests are made through Fast (exact percentage depending on customer and what functionalities in Fast they have in use). Most requests are made by phone ($\approx 50\%$) and via e-mail ($\approx 40\%$).

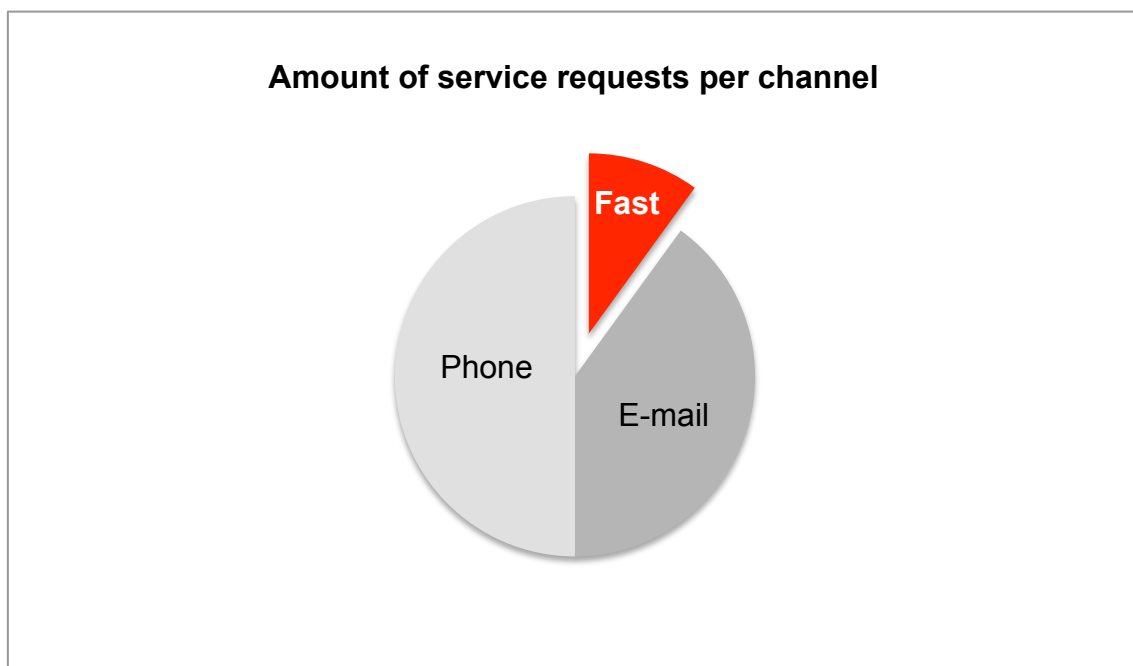


Figure 3. Only fewer than 10% of service requests are made using Fast (exact number depends on client company)

An important subject for the user interviews became to find out why users were not using Fast. Service desk personnel said that a phone call was actually the best channel for solving very urgent issues, since it is the fastest way (and enables a dialogue). A phone call will usually be answered within half a minute by the service desk, while the response time for a service request through Fast can be about half an hour (for an e-mail usually longer). But when comparing e-mail vs. Fast for creating a request, the users should in theory select Fast since it has clear benefits over e-mailing. The process of creating a service request via Fast and e-mail are very similar, since both involve the same steps of describing the issue in written format. There are though clear benefits in Fast, other than getting a response faster. All requests created through Fast are stored in

a personal folder where users can view own open and closed requests / resolutions and give additional information if needed. In Fast the user makes an initial categorization and fills all the required fields, which ensures that the service desk personnel can resolve the request without contacting the user for further details (this could also be viewed as an inconvenience for the user). The resolutions of requests made by e-mail are also always presented in Fast.

All the interviews painted a fairly clear picture on why users don't use Fast despite all its benefits. The first issue was not a problem with Fast itself but seemed to have to do with the first introduction of Fast at a new customer. The comments of an IT Manager, when talking about the launch of Fast at the company he worked for illustrates the problem well: *"We met a couple of times and they (Fujitsu) showed us the features in Fast. After that we had a piloting phase for some users, and since nothing special happened we rolled it out to the whole company and informed our people about Fast on our intranet"*. The most important finding was the joke he made later in the interview on how nobody really reads the intranet. He could also not recall what the information on the intranet was and who had written it. Concerning the same Fast launch-phase, a sales person inside Fujitsu told us that there are no clear steps to take, and no ready-made material for the end users when Fast is launched. The only clear roadmap was for the technical implementation of Fast.

Addressing and informing the end-user at the launch-phase in a new company, seems to have been neglected in the roll out process. This view was also enforced by a regular user working in a laboratory who said: *"When Fast was introduced it just replaced the old system that was quite different, then we just started using it"*. When asked why most of her colleagues didn't use Fast she replied that they were just used to calling the service desk.

The conclusion drawn from this was that users will keep using familiar tools (like mail and phone) instead of adopting new technology (even when it is superior) if they do not get any initial introduction and support in using it. Since users can do the basic things using familiar technology they might never try Fast leaving them oblivious of its benefits.

3.4 Usability issues

When asked what users had trouble with when using Fast, the most common answer had to do with some information missing. Often users did not know how long they had to wait for a service request to be processed or what the urgency categories in the service request meant (*not urgent / normal urgency / top urgent*). It was also unclear through what channel the service desk personnel would answer the request or ask for additional information (*Fast / phone / mail / other*). Same issues of missing information came up concerning the news about service interruptions. Users said that it was often unclear how long a service break or interruption would last or when additional information would be given. Also some comments on the news not reaching the correct people were uttered.

Many users had indirect comments on the user-interface (and not only the functionalities). When asked, users could not often name the different features of Fast. This seemed to have to do with the fact that different users have such different skill levels and use Fast in different ways. Some said that it was messy and inconsistent while other thought it worked just fine. Comments on the user-interface often seemed to be linked with how the user was using Fast. A common answer was that it takes too many clicks to do thing (like sending a service request). From all the comments it can be concluded that Fast works very well for certain types of usage but unfortunately not for all.

Despite many negative comments a lot of the user who where actually using Fast often, where very or quite contempt with the service. Many of the issues seemed do be viewed as minor, and something that would be good to fix, but nothing that was crucial. There was no common tendency in thoughts on what features where missing from Fast. Mostly the users just wanted the current features to be developed to work better. In conclusion, it seemed that there was a barrier in starting using Fast, but once users got familiar with it, they thought it worked well.

3.5 The user-interface

Not only the interviews where a part of the analysis part but also analyzing the user-interface. The first task was to find out how the user-interface related to the interview findings and weather it was a part of the low usage percentage of Fast.

The main question was: how does the user-interface support the view that service request should be made through Fast? A simple way to analyze web pages is by looking at how people look at them. Using so called heat maps show how internet pages are read. The common pattern for reading an internet page is that people start from the top left corner and move to the right, then move down and again to the right, then again down. This creates a pattern (called the F-pattern) that resembles a capital F. (Nielsen, 2006) No actual tests were made on Fast but since this is a common way to read web-pages it can be applied to the Fast user-interface. In Fast, the user focal point will first land on the most current news topic where after their focal point will move right, towards the Service request icons. This should not cause a problem since the first focal point is the newest news item, which informs the user about possible service interruptions, new features or other important news. After this the focal point will move on to the service request icons. According to F-pattern the placement of the elements should not cause a problem.

What might cause a problem is the abnormal structure of the page. There is no top or left navigation like in most web pages, instead the navigation is done with the icons on the right side. Also the fact that the user-interfaces of different sections are inconsistent with each other and the first page might create a disconnected and confusing feeling (figure 4).

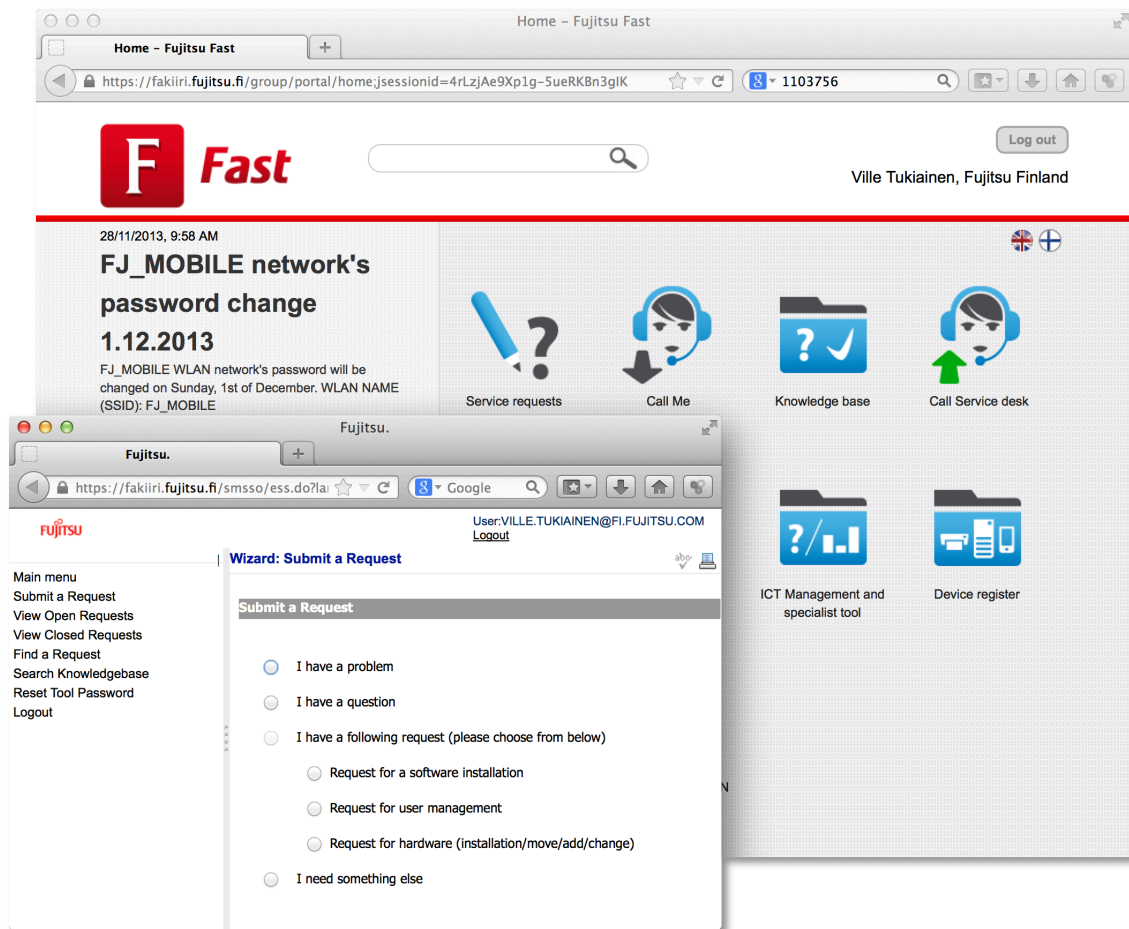


Figure 4. The different sections of Fast look very different. The top window is the Service Request section.

When analyzing all the steps of creating a service request the problems with the user-interface becomes clearer. The minimum amount of clicks to create a service request is 11 (sending an e-mail requires 6 clicks) during which the user encounters 4 different user-interfaces. This makes the process very inconsistent. There are also many steps that are confusing, like the mandatory selection for what kind of problem the user is reporting.

- I have a problem
- I have a question
- I have a following request (please choose from below)
 - Request for a software installation
 - Request for user management
 - Request for hardware (installation/move/add/change)
- I need something else

Based on the interviews and the user-interface analysis it can be concluded that the inconsistency of the user-interface together with the separate smaller problems the users where facing is probably partially causing the initial usage barrier. Even though the structure of the web page seems to be correct, the many other problems of the user-interface seems to partially hinder Fast from being the main service request channel.

4 DEVELOPMENT

As a result of the research, a new user-interface was built and suggestions of changes in some function were made. As the main focus for the project was conceiving and re-designing the user-interfaces the development was mainly limited to these results.

The one finding that did not have to do with the concept and design, but had to be dealt with, was the problem with the launch process of Fast in new client companies (see section 3.2). While this was an important finding that was passed on to Fujitsu, only some parts of it affected the development of Fast itself. Big parts of the results had to do with business processes, which fell out of the scope for this project. Some measures were also done in the Fast development, which aids new users in easily getting familiar with the service if they start using it.

The main user-interface issue seemed to be that Fast was lacking a easily understandable hierarchy that aided users to remember and find all the content, even content they did not know existed. The foundation for the new Fast user-interface was to display the content so that the users would know what could be done through automated processes, and what needed to be done by a person at the service desk. This reasoning led to separating the support part to its own blue part, while leaving the *News*, *IT-tools* (meant for the professional users) and the new *My Patja* categories in the red part of Fast. Clear color codes were selected to distinct the parts from each other and make the navigation as intuitive as possible. The idea was that once the user had realized the difference between the red and the blue part, the colors would be such a strong visual reference that the user would always remember what functions were in which part.

It was also planned that as much of the information should be displayed in the Fast user-interface as possible (instead of a third party interface) to get a coherent experience. This meant retrieving information from the third party systems and rendering it inside the Fast user-interface instead of directing the user to the third party system with its own user-interface. This was proven to be a laborious task since it required a lot of new functions and integration for the work flow engine team. On the other hand, it did improve general usability since the users could now use the browsers own back-button, which by many is perceived as an important function (Nielsen Norman Group, 1999).

To make Fast as easy to use as possible it was also decided that the user-interface should be sleek and simple, and all distracting elements should be removed.

Only tools that had to do with the particular task at hand should be shown. This meant creating a hierarchy that would hide the other tasks until the time the user needed them. Although the back button is important the idea was to make the customer journey for doing one task so simple, that no back button was needed.

At first there was also some discussion within Fujitsu weather the user-interface should just be updated (and not totally re-done), but after some preliminary rearrangements and design tests (figure 5) it was decided that the best result would be achieved by a totally new user-interface built from scratch, with a new hierarchy instead of trying to fix all the problems in the old interface.

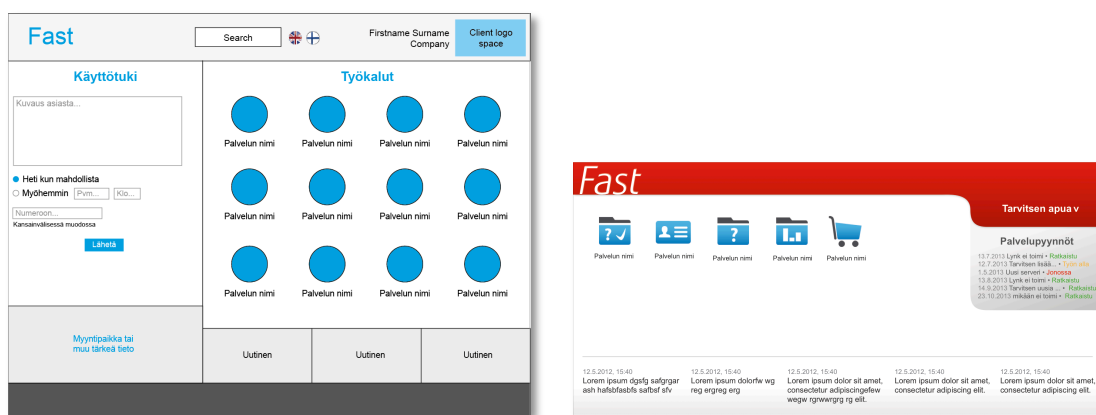


Figure 5. Initial tests of fixing the user-interface by modifying the existing one.

4.1 My Patja

As Fast is the part of the Patja service where end-users can make changes to their existing services, the most intuitive way for the users was to show a category that contained all settings connected to the Patja service, this was named *My Patja* (Figure 6). This is the first page that opens when the user enters Fast. In the *My Patja* section, all settings related to the Patja service are listed and shown in a plain way, so that the user see everything in one quick view. The reasoning was that listing all possible changes that could be done automatically would reduce the unnecessary service desk contacts that were caused by users not knowing how to make changes them selves (like resetting a forgotten password).

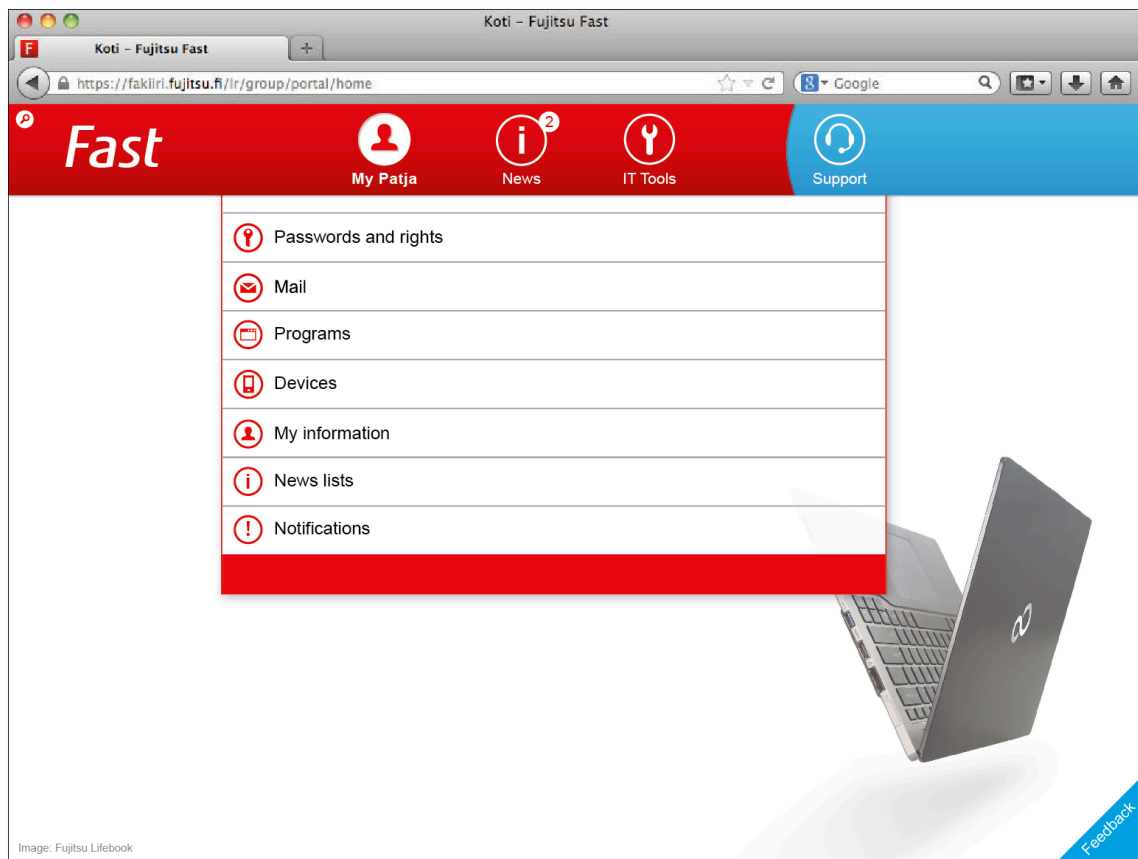


Figure 6. The new Fast interface with the My Patja section open.

4.2 News

In the old user-interface the *News section* was in the prime spot of the web page (where the user first looks), nevertheless it was questionable how much of the content actually was seen (interview results did not point to the information being read). Often it was perceived as more of a disturbance than a service. This is why a separate section called *News* (Figure 7) was created at the same hierarchy level as the *My Patja* section. It was not put under *My Patja* since the news were not personal information, but information concerning the whole service.

Deciding to not show the news on the first page (like in the old user-interface) raised the question how it could be ensured that the users ever visited the news section. As a resolution, a notification number was introduced on the side of the icon (figure 6, number on the side of the News item). This number was to indicate how many unread news articles the user had. This was perceived to be a familiar concept for users from e.g. social media, which would encourage users to go to the category to reset the coun-

ter. If they didn't visit the section, they could at least see how many unread news items they had. Several improvements to the articles themselves were also made, like a standardized format for the text and icons indicating the type of news.



Figure 7. The News section of Fast

4.3 IT Tools

Only administrator users have access to the IT tools. In the old user-interface these tools were the blue icons that did not refer to the service desk (see figure 1). It was decided that only minor changes needed to be made to this category. The category now lists all the tools that are available but they all open in a new window with a separate user-interface (usually made by a third party). The reason for this was that the users of these tools are IT professionals who are used to dealing with complicated interfaces and tool. The usage level for these tools is also so much lower than for the common tools that it was perceived as a waste of resources to start integrating these in to the Fast user-interface.

4.4 Support

As the support part (with a blue color code) was found to be the most important, the main focus of the development was put on this section and the functionalities of it. The section was divided in to 4 categories: *Support, Requests, learning and community*. The old *Knowledge Base* that used to contain self help tips and tricks was removed since it was not perceived as useful by either the clients nor Fujitsu.

4.4.1 Support and requests

The former separate service desk tools (*Service Request, Call Me, Call Service Desk*) where all combined into the *Support* section (*Figure 8*) since there was no reason in having the user first selecting the channel for request and only after this defining the problem. Having the user first define the problem (then the channel) also opened a future development possibility to recommend one channel over the other, depending on the nature of the problem.

The initial categorization (see section 3.5) of the service request type, made by the user, was changed into a user-friendly format. Instead of presenting choices that where interpreted in a different way by every user (and Fujitsu personnel) the user is now presented with a straightforward list of selections that aims to define the target of the problem. First the user is asked to select one of the **main topic** where after the *specific topics* are presented. The categories are the following:

- ***Passwords and logging in***

- Need new access | Forgotten password | Problem logging in | Other*

- ***Hardware***

- Desktop | Laptop | Cellphone | Printer | Wi-Fi | Tablet | Other*

- ***Software***

- Problem | Need new software | Mail | Other*

- ***How do I do something?***

- ***Other***

The phone number for the service desk is now presented on the bottom part of the user-interface so that it is visible during all the steps of creating the service request, but it is not highlighted as a separate channel equal to the written channels. It is also expected

that most of the current users already have the service desk phone number so they will not need to look for it every time they need to call the service desk.

As a further development plan, it was also suggested that once the user has made the initial categorization a *top 5 resolutions* list for that particular category could be shown that might help users in solving the problem without creating a service request. This was to be introduced at a later stage since a process needed to be created to ensure the top 5 resolutions were updated and current.

The user specific service request listing that according to many of the respondents used to be hard to find was given an own section. Except for the new user-interface and some filtering possibilities the list view itself remained somewhat unchanged. The biggest improvement was giving the possibility to easily add additional information to the service request once it was made.

The screenshot shows a web browser window with the URL <https://fakiiri.fujitsu.fi/ir/group/portal/home>. The page has a red header with the 'Fast' logo and a blue navigation bar with icons for 'My Patja', 'Community', 'Learning', 'Requests', and 'Support'. The main content area is titled 'Create service request' and includes a sub-header with links for 'Hardware', 'Desktop', and 'Monitor'. Below this is a form with a text input field labeled 'What is the problem?' and a 'Contact' section with buttons for 'Chat', 'Send', and 'Call back'. The 'Chat' button indicates a queue time of about 2 minutes, 'Send' indicates an answer within 30 minutes, and 'Call back' indicates the service desk will call within 30 minutes. There is also a checkbox for 'Request is urgent'. Below the form is a section titled 'Top 5 resolutions' with a list of placeholder text. At the bottom, there is a contact number '+358 29 302 2378' and a note 'Weekdays 7-17'. A large image of a smiling woman with a headset is on the right side of the page, and a 'Feedback' button is in the bottom right corner.

Figure 8. Creating a service request in the Support section, below the top 5 resolutions for the selected category.

4.4.2 Learning

The learning section was seen as an important improvement in the direction of developing Fast to be more of a learning portal than simply a channel to contact the service desk (this was perceived important by all respondents). Before the Fast development project started there were already plans to get rid of the thousands of text instruction documents and start producing simple video instructions. The learning section became the place for these videos. The reasoning was that Fast could take a much more proactive role in helping users develop themselves and use their office tools efficiently instead of just resolving problems when they arose. This was viewed as a good way of reducing unnecessary service requests.

4.4.3 Community

The community section was a new one and would not be released in the first phase since it needed to be well defined and tested before implementation. The idea was that using peer support could reduce the amount of service requests if users helped each other. The solution was to enable a “*public service request*” that anyone could answer, but it would also be sent to the service desk to guarantee it was answered. This could then also be developed into a good Q&A section as the amount of service requests grew. It was also suggested that giving prizes or points to helpful users could be used to encourage solving others problems. As this was a new idea the section was left to be done last when all the other improvements were already made.

5 DISCUSSION AND CONCLUSIONS OF THE FAST DEVELOPMENT PROJECT

One of the important findings of the research project was the fact that the low usage percentage of Fast is most probably caused by to lack of information and involvement for the end user in the launch process. This is not a flaw within Fast, but in the business process of Fujitsu. The aim of this development project was to develop Fast, but also the business process needs to be changed since the problem can not entirely be dealt with within Fast. This shows that the initial reasoning that there is a problem with Fast was only partially correct. This is why it is important not to make too specific assumptions at the beginning of a project, or some important fact might go unnoticed. Luckily the launch process of Fast can also be fixed together with the service it self.

The second finding, that users viewed Fast simply a service request channel, could be resolved by re-designing the user-interface. The new user-interface should be so intuitive and informative that users will find all the automatic support features and make a service request only when it is really needed.

When Fast is launched correctly and all the suggested improvements are done, further development should be put into making Fast a daily (or at least weekly) tool for all users. Ensuring that Fast is a tool well known to users, is the best way of ensuring that it is used. Only an easy and familiar tool can replace another familiar tool (e.g. using Fast to contact the service desk instead of an e-mail). It does not matter how many benefits the new tool has, it will not be used if it strange to the users. The best way to get users to familiarize them selves with a new tool could be to engage them, and have them participate in the development of the tool, creating a sense of ownership for the users.

Whether the hypothesis is right, that users will adopt the new simple and intuitive Fast that brings benefits over the old media, remains to be seen. The answer to this should be measurable in half a year after the new user interface is launched.

6 ISSUES RUNNING A SERVICE DESIGN PROJECT IN A COMPANY

Service design is a way of thinking that includes both the process and a set of tools for running a project. Service designs unique features are based on the customer point of view and co-creation. When running a Service design project inside a company that has it's own established processes and tools, the service design process might conflict with the companies pre-existing ways of running a project. In this chapter I will deal with the problems caused by introducing service design as a new tool at a company.

Service design manuals and research mostly focuses on the service design tools, processes and the service being developed while neglecting that the project is always run in a company with possible pre-existing conventions. This lack can be seen in the main literature used for this research: *This is service design thinking* (Marc Stickdorn, 2011), *Palvelumuotoilu - yleissunnittelua empatiaa ja osallistumista* (Miettinen, 2011) and *Palvelumuotoilu* (Tuulaniemi, 2011). Even the case studies do not deal with the issues of bringing in a new way of running projects into a company that already has a set way of doing things. The case studies that do focus on the company structure rather than customer interaction are very cursory and do not deal with possible problems in implementing changes like the case study for The NL Agency and Design Thinkers in *This is service design thinking* (Marc Stickdorn, 2011 p. 220-233). Of all the case studies read for this project none has been done by a company internally, but always with the help of an external person or company specialized in service design (Marc Stickdorn, 2011) (Miettinen, 2011) (Tuulaniemi, 2011) (HU University of Applied Science Utrecht, 2013). There are often also no chapter on flaws and issues that might hinder the service design method in the first place. I have yet to read one unsuccessful service design case study and this is why I want to raise this issue. In service design literature it often seems that the projects are run by an outside resource specialized in service design. When this is the case, it might be easier for everybody involved in the project to accept the new processes the outside person is bringing in to the company since the need for a new way of running the project has already been identified in the company. When a project is run without outside help it is assumed that company procedures are followed. This view is only based on my empirical findings and do need further research.

During the Fast development projects I ran into several issues I could not anticipate, that had to do with work processes in Fujitsu being different from the service design method. These issues had to do with attitudes, ways of running a project, timing, resourcing and internal invoicing. It can be assumed that all companies have their own processes and therefore different issues will arise in different companies.

6.1 Ways of running a project

One of the main findings of the Fast development project was that the launch phase of Fast was done in a way that did not include the end-users, thus making it hard for them to start using the Fast service channel in a efficient way (see chapter 3.3). This issue could not be dealt with inside this project (only development suggestions where made) since it was already at the beginning of the project determined that this project only dealt with developing Fast and not supporting business processes. This decision had been made because it was assumed that the low usage percentage of Fast was caused by issues within Fast itself, not processes connected to it. This resulted in certain kind of resources with mostly IT know-how being assigned to the project already at the beginning, which then determined what could be done whit in this project. This initial assumption ruled out the development of the launch process, because the necessary persons where not involved for that. Also a certain mindset had already been set to those supervising the project, making it impossible to change the scope and the focus of the work. The service design handbooks have many good tools but do not account for resistance from inside the company or problems that might affect the outcome (Marc Stickdorn, 2011) (Miettinen, 2011) (Tuulaniemi, 2011).

6.2 Suggestions

These suggestions are made based on the findings of the Fast development project and primarily concerns Fujitsu. I do not doubt though that same issues would arise in any similar company that does not do customer oriented development. I suggest any person running a service design project as a company employee (not a outside consultant) at least considers these suggestions and evaluates weather their project might benefit from these suggestions.

6.2.1 Initial meeting for decision makers

For running a successful service design project that does not conflict with a companies prior methods I suggest the project should start with a initial meeting involving all the decision making parties (who are in charge of resourcing, budgeting, scope of the project etc.). The aim of this meeting is to introduce service design as a method to those decision makers unaware of it, and ensure that they have an understanding of the service design principals and what they can expect the outcome of the project to be. Using some of the service design tools in the meeting, like the customer journey method where you look at a service from the customer point of view might give them a concrete understanding of what service design is. Using the correct tool might also help them see the service that will be developed from a new perspective bringing to light issues they have not thought of before. This initial meeting will both educate the decision makers and work as a kick-off for the service design project. In this initial meeting it is also important to go through what parts of the service design method might be in conflict with the existing company practices, and solve possible issues. This is particularly important since the structure of the project needs to be in order and everything settled before you enter the next stages. Participants being uncertain of the methods used might jeopardize the results of the project and make especially co-creation harder or even impossible. The first step of the service design process is always described to be the customer understanding. I suggest that even before this an understanding about service design is needed by all parties involved or the process might be jeopardized.

6.2.2 Fitting service design with company structure

The correct phasing of the project will ensure that all needed departments and functions inside the company are involved in the service design project. The manuals on service design vary a bit but always phase the project in into 3 main phases. 1 Service and customer understanding. 2 Creation and reflection. 3 Implementation. This is the same weather the manual is done by a government institution (UK Open Government Licence, 2014) or a school (Karelia-Ammattikokeakoulu). What they do not address is the need to phase the project also according to internal company needs, not just project needs. From the company point of view I suggest also adding a checkpoint for discussion how the findings fit in with the company structure and resourcing. The checkpoint

should be placed at a point where the customer understanding is sufficient enough and plans have been made on how to design the new service. An important aspect from the company's point of view is not only to get an understanding of the user experience but also to be able to determine what departments and functions inside the company this development might affect. This understanding will also ensure that all persons essential to the development are included in the project.

At this checkpoint a meeting should be held with the same decision makers that participated in the initial meeting. In this meeting the research findings should be presented and decisions made on how to continue. It might be decided that some issues are more important than other or that the project can be split into two or more separate projects. The important part is to understand both the customer side and the company structure and see how improvements can be made that fit both. This might very well call for compromises. The danger at this stage is to focus too heavily on the company structure and delegate tasks to separate departments, doing this might result in every department doing their own changes without understanding of the customer side of the issue.

6.3 Shifting company procedures to be customer oriented

It seems that companies like Fujitsu, with a strong technology background, still develop services by the terms of technology and the company structure instead of really focusing on customer needs (Steinhardt, 2014) (Gartner, 2013). I do not have sufficient research to generalize, but it can be assumed that companies across all industries are facing the same problems. Running a service design project in this culture can prove challenging but can also bring a new customer oriented culture in to the company with real benefits. An example of this is the company Fonecta that has transformed from a telephone catalogue company to a media company through service design means (Palmu, 2014). I suggest taking the time to introduce the service design method to everyone included in the project. Not only related to the project at hand but also in general, so the participants get a good understanding of why customer oriented thinking is important and what can be achieved using the service design tools. A concrete action could be to create a light information package on service design and how it fits in to the company's goals. This package can be given to everyone involved in the project and others interested in customer oriented development.

6.4 Using service design as a toolbox

Service design is a great toolbox for customer oriented development projects (Marc Stickdorn, 2011 p. 146). What makes service design a useful method is the way it allows you to look at a service through the customer's eyes and then develop the service in an encompassing way through co-creation, which benefits from all participants point of view. With service design it's strength is also its weakness. Service design focuses on understanding the customer but does not give good tools on how to develop a service that is integrated into a company structure. When you look at a service only through the customers eyes you get a feeling that a service is one consecutive event from start to finish. But from the service provider point of view there might be tens of different departments involved, and they all have internal relationships. Take the Fast service channel as an example. From the user side creating and getting an answer to a service request is quite straightforward but from Fujitsu's side it involves an intertwined web of actors as *figure 2* shows. It is important to focus on the customer but a fact is that the company structure will affect any development project. Not restraining yourself at the first stages of the development phase is a powerful way of generating ideas but at the end the company structure will determine how the changes are implemented.

While service design is a method on it's own I suggest it should be viewed as a toolbox for getting the customer understanding and doing co-creation. You don't have to use all the tools in a toolbox to get a job done. The tools and principals are very similar in all the service design literature used for this thesis but the structure of the process varies a bit. The wide range of case studies indicate that service design could be adapted to suit any preexisting company and project structure (Marc Stickdorn, 2011) (Miettinen, 2011) (Palmu, 2014) (Tuulaniemi, 2011). I suggest that before a service design project is started at a company, an assessment should be made how the company's preexisting structure and project guidelines fit together with service design. This is not an easy task and since service design seems to lack tools for this. Fitting service design into a company structure requires a deep understanding of what elements a service design project needs to involve to succeed.

Further research is definitely required in the field of integrating service design into a company that has a pre-existing way of running projects. Tools need to be developed that support running customer oriented projects from inside a company without an

outside consultant. I would also suggest research on the differences between an outside consultant running a service design project versus an employee of a company running the project. My hypotheses for further research would be that for companies with a certain culture it more efficient to have an outside consultant running the first service design project and teaching the methods to the staff while developing a service versus doing it them selves. I also assume some company structures do support the service design method better than others.

7 SERVICE DESIGN RESEARCH

It should be noted that the material concerning service design used for this research (books, manuals, case studies) are mostly not academic researches. They are either manuals promoting service design by private publishers made for the public market like *This is service design thinking* (Marc Stickdorn, 2011) or general introductions to service design made by schools like the books *Palvelumuotoilu* (Miettinen, 2011) and *Service Design - Insight from nine case studies* (HU University of Applied Science Utrecht, 2013). Even though these manuals are undoubtedly written by professionals in their own field they give a one-sided view on service design, with a main aim to promote the use of it. The case studies are often seem like sales presentations, especially if they are written by a company or person who has done the project like the cases in *This is service design thinking* (Marc Stickdorn, 2011 p. 218-295).

I have looked for texts with critical approach on service design that would also consider the organizational but there is little to be found. There are theses available for the public on the internet and in scholarly databases (e.g. Emerald, Nelli, Google scholar) but also they do not discuss conflicts with organizational structure the service design method might inflict nor do they go all the way to implementing the suggestions they give.

An example of this is Laura Saarelas (2009) master's thesis Design Business and Design Research concerning a real estate case study using service design methods. Saarela gives good suggestion on improvement of the real estate for the entrepreneurs but does not discuss what behavioral changes in the entrepreneurs activities could support the changes nor does she discuss possible hinders for the changes like conflicts in the interests of the entrepreneurs. Saarela also suggests setting up a webpage for the real estate but does not tackle how it will affect the work of the landlord or how the website is funded and maintained in practice. Saarela also refers (on p. 21) to Engine Groups model on service design (Engine Group, 2014) that has four parts: discover, define, develop and deliver but in her thesis she never gets to the delivery part. (Saarela, 2009)

Another example is Mikko Taivalkorpis (2011) master's thesis in Media Management. It is a case study where Taivalkorpi uses the service design method to improve the services of the Willa MAC Museum of Contemporary Art. Again the results of the research and Taivalkorpis suggestions seems to be relevant but there is no discussion on

what the suggestions mean for Willa MAC as an organization or what changes Willa MAC needs to make internally to implement the suggestions. At the end of the thesis (p. 55) Taivalkorpi simply says that “improving operations compiling new services requires time and resources” (my translation). (Taivalkorpi, 2011)

These examples are not criticism towards the theses but towards service design as a method. Service design does not seem to give any good tools for restructuring the organization to fit the outcome of the project nor does it include a stage that would examine the suggested improvements effect on the organization. This raises some concerns as service design seems like very good method but it is questionable whether companies will want to use the method without getting a truthful picture of what this method requires from the company side. I suggest researches that do not only promote service design but also have a critical view on it should be done. If deficiencies are found in the method like I suggest new tools should be developed to improve the method. This would give the service design method more credibility and ensure that the method is not only good for idea generating but also in practice.

Service design should not only be for service design professionals like the current literature suggests. I urge everyone to try the service design method and tools in their projects. It is worth reading a manual but also to be aware of how the methods and results might affect the company you work for.

8 TERMINOLOGY

Service Design: A user-centric method of developing a service

Fujitsu: In this thesis Fujitsu refers to the Finnish company Fujitsu Finland Oy

Information technology (IT): Term used widely for processes involving a computer

Work Flow Engine (Flow): The communication channel between different systems

Active Directory (AD): A database that stores information (usually user permissions)

Service Manager: Tool used by the service desk for processing service requests

Service request (ticket): Problem solving request made by the user to the service desk

Bring Your Own Device (BYOD): Employees working on their own devices instead of company owned

Service Desk (SD) or help desk: Team that handles IT problems

Voice over Internet Protocol (VoIP): Phone call made over the internet

Multi-tenant environment (Multi-tenancy): A principle in software architecture where a single instance of the software serves multiple client-organizations (tenants).

Liferay: Liferay is the technology Fast user-interface is built upon. It is a content management system (portal) based on Java. Liferay is used by many big companies and organizations like the French Ministry of Defense (<http://www.ixarm.com/PlAtForm-hub>), Lufthansa (<http://www.lufthansa-flight-training.com/en/home>) and World Vision (www.wv-kospace.com). Liferay offers a broad possibility of modification with portlets.

Portlets: Independent elements with specific functionalities, added onto the main (web) page. (Liferay, 2013)

Knowledge Base: Storage environment for service desk answers used for self help

User (end-user): In this essay *user* and *end-user* refers to Fujitsu's customer companies individual employees (as the end-users of a product)

Service level agreement: The agreement between Fujitsu and a client company that determines what level of service a client company has bought from Fujitsu (contains e.g. maximum respond times to service requests)

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